


Central Iraq Microwave System (CIMS) Supports Theater Communications Missions

Stephen Larsen



It's difficult enough managing telecommunications infrastructure projects under normal circumstances while trying to juggle cost, schedule and performance to provide the best possible system to the Soldiers you service. The challenge gets a lot tougher when you're managing telecommunications infrastructure projects in Iraq and you have to factor in the problems inherent within working in a war zone.

CIMS is providing superior communications bandwidth to support combatant commanders' and their Soldiers' critical command and control capabilities in challenging desert and urban environments. Here, Soldiers from 3rd Battalion, 320th Field Artillery Regiment, 101st Airborne Division, dismount their vehicles during a patrol near Tikrit, Iraq. (U.S. Army photo by SPC Teddy Wade, 55th Signal Co. (Combat Camera).)



However, with diligence and perseverance, one can overcome these obstacles and deliver a high-quality system, as MAJ Kevin Messer proved during his recently ended year-long deployment to Iraq. Leading a team from the Project Manager, Defense Communications and Army Transmission Systems (PM DCATS), part of the Army's Program Executive Office Enterprise Information Systems, Messer implemented CIMS, which provides near real-time point-to-point, point-to-multipoint and multipoint-to-multipoint data

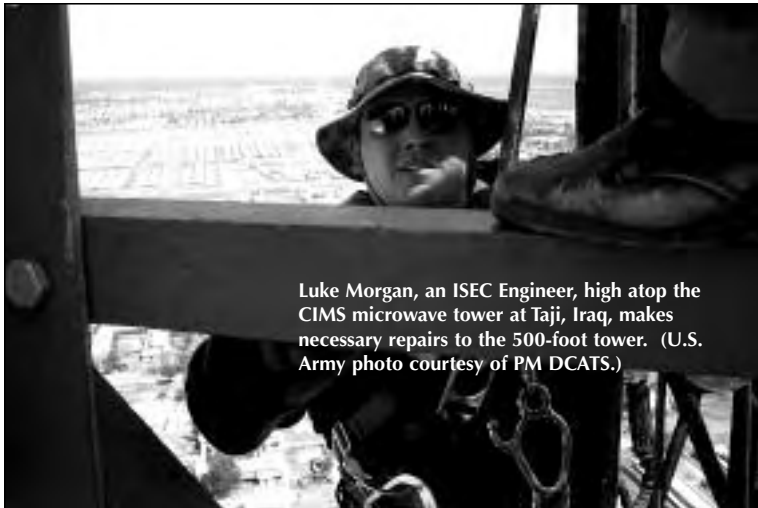
transmission services with multiple layers of redundancy for the Multi-National Force-Iraq (MNF-I).

CIMS, with the synchronous optical network communications links in the International Zone and Camps Victory, Slayer, Taji and Anaconda, provides OC-3 (155 megabits per second) bandwidth to support warfighters' critical command, control, communications, computers and intelligence missions. Messer said the links in the International Zone and Camps Victory and

Slayer became operational in December 2005, with the Taji and Anaconda links following in April 2006.

CIMS allows MNF-I personnel to tap into the Nonsecure and Secret Internet Protocol Router Networks, the Combined Enterprise Regional Information Exchange System, voice, video teleconferencing (VTC) and the Joint Worldwide Intelligence Communications System.

"Because CIMS is a low-latency, high-speed, high-bandwidth system," said



Luke Morgan, an ISEC Engineer, high atop the CIMS microwave tower at Taji, Iraq, makes necessary repairs to the 500-foot tower. (U.S. Army photo courtesy of PM DCATS.)

Messer, “it allows MNF-I personnel to transmit near real-time data to support strategic or operational missions — whatever the user needs it for. CIMS will allow us to relieve one DKET (deployable Ku earth terminal) and to redeploy that DKET elsewhere.”

“CIMS is a major asset to forces in Iraq for providing lower cost and higher speed interconnectivity versus traditional satellite deployments,” added Luke Morgan, a U.S. Army Information Systems Engineering Command (ISEC) Engineer who worked on the CIMS project.

Overcoming Engineering Challenges

Despite considerable pressure from users to deliver CIMS, Messer steadfastly insisted on straightening out the system’s kinks before turning it over. He said a major engineering challenge was that CIMS, which includes microwave radios, asynchronous transfer mode switches and high-speed encryption devices, couldn’t be tested before being fielded. Instead, they had to install the system and then fine-tune it from end-to-end. After exhaustive testing, with participation from ISEC engineers, the gaining operations and maintenance (O&M) command and coordinated support from vendors and contractors, CIMS’ performance far

exceeded commercial standards. “We had to learn on the ground,” said Messer. “We could not assume conditions would be as they should be, or as we might expect they should be.

We could not assume tech control facilities had stable power or grounding — sometimes they did, sometimes they didn’t. We could not assume wiring was properly installed or insulated. We, as the PM, or the O&M folks, had to do the upgrades to fix the problems as we encountered them. Whatever it took, that’s what we did.”

“Everything is more difficult in Iraq,” echoed PM DCATS’ SFC Arthur Lee, who assisted on the project. “While managing your project in Iraq, the

‘rule of 3 and 6’ governs operations, meaning it takes three times longer to get anything done in Iraq on a ‘normal’ day and six times longer when things get hot with increased insurgent activity.”

Some “normal day” challenges? The climate, for one. Messer said there were temperatures of 120-plus degrees in the summer and torrential deluges during the rainy winter season, which would fill the pits excavated for the microwave towers’ concrete support pads and have to be pumped out. “We also had three sandstorms when I was there,” added Messer. “You would see a mountain of sand stretching across the horizon, hundreds of feet high, and watch as it approached you. The only thing you could do then was to wait until it passed over you.”

Another challenge was getting Iraqi workers and vehicles on and off bases. “You had to get the local nationals (Iraqi workers) badged,” said Messer. “Then it could take a couple of hours



The CIMS microwave tower at Taji rises 500 feet, and provides crucial data transmission services for operational units in Iraq. (U.S. Army photo by Luke Morgan.)

as they waited in line to get through the gate. Then you had to get them back off the base at the end of the day. This limited the number of hours they could actually work in a day.”

Lee related one such experience of trying to get a water truck onto a base, where the water was needed to make the concrete pad for a microwave tower. After the truck waited in the queue

for several hours and finally reached the gate, the checkpoint guards made the driver empty the water tank for a security inspection, to ensure there were no explosives, weapons or insurgents hidden in the tank. “Luckily, we were able to refill the water tank from a stream near the work site,” said Lee.

And then there was the problem of the height of some of the microwave towers: they reached as high as 500 feet at some locations, which was a problem when the Iraqi cranes went only 100 feet high and sometimes bent when lifting sections of towers. The team ended up importing a gen pole and winch from the United States to do the heavy lifting.

Recounting one unfortunate incident, Messer stated that “We lost one local national to a terrorist attack,” said Messer. ISEC’s Morgan remembered several incidents of small-arms fire at the microwave tower sites during construction. “One morning,” Morgan added,



PM DCAT’s MAJ Kevin Messer (left) and SFC Arthur Lee display the smaller CIMS components. Messer holds a microwave tower anchor bolt and Lee holds a piece of fiber-optic cable. (U.S. Army photo by Stephen Larsen.)

“an unexploded rocket was found 60 feet from the base of one of the tower sites.”

If it really got hot, Lee said the crew could get locked down “inside the wire,” behind the concrete walls and barbed wire of the base’s security

perimeter, where they waited for things to cool off. “That could bring the project to a halt,” said Lee, “until it became safe enough for the Iraqi workers to travel and get back to the base, or for us to get off the base to go to other bases.”

Despite these challenges the CIMS team made it work. Messer gives high marks to the CIMS

team, singling out ISEC engineers Morgan and Brock Tucker for kudos. “I had those guys working 18-hour days for almost 3 months straight,” said Messer. “When we ran into problems, they’d stop, troubleshoot and fix the problems.”

Messer also praised the performance of Robert Delaski of CACI International

Inc., the contractor CIMS project coordinator on the ground in Iraq. “Robert Delaski was amazing,” said Messer. “He was my go-to parts guy. If we needed material — fiber, antennas, whatever we needed to be successful — you would see Delaski driving a fork-lift across Victory Base with it.”

Despite the obstacles, CIMS was delivered just ahead of the promised mid-

April 2006 date. The system’s operation exceeded expectations, and the customer was pleased with the result. This was evident April 17 when BG Gary Connor, MNF-I’s Deputy Chief of Staff, Communications and Information Systems (C6), stopped a high-level VTC of officers representing MNF-I, the Coalition Forces Land Component Command, the 335th Theater Signal Command and the 160th Signal Brigade to publicly recognize Messer for his work on CIMS and other infrastructure projects in Iraq. Connor presented Messer with an MNF-I commander’s coin and an MNF-I patch for his uniform.

“I felt appreciated — no, make that vindicated,” said Messer. “I would not turn over the system to the customer unless it was right. Despite the challenges, we met the date and delivered what we promised.”

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